The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte EDUARD SACKINGER

Appeal No. 2005-0449
Application No. 09/498,559

ON BRIEF

Before GARRIS, TIMM, and JEFFREY T. SMITH, Administrative Patent Judges.

GARRIS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal which involves claims 1-19.

The subject matter on appeal relates to a circuit for use as an active inductor on an integrated circuit comprising a transistor adapted to operate as an active inductor that is biased using a voltage generated on the integrated circuit which is outside the range of the voltage supplied by a power supply

for operating the circuit. Further details of this appealed subject matter are recited in the appellant's independent claims 1, 14 and 16 which read as follows:

1. A circuit for use as an active inductor on an integrated circuit having a power supply voltage supplied at a first power supply terminal, comprising:

an metal oxide semiconductor (MOS) transistor having a gate terminal, a drain terminal, and a source terminal, said drain terminal being coupled to said power supply voltage and said source terminal being one of the terminals of said active inductor; and

a resistor having a first terminal coupled to said gate terminal and a second terminal coupled to a voltage that is derived from said power supply voltage and has a larger absolute value than said power supply voltage supplied at said first power supply terminal and the same sign as said power supply voltage;

said circuit being adapted so that when said circuit is operating said circuit behaves as an active inductor between said source terminal and an other terminal of said active inductor on said integrated circuit.

14. A circuit for use as an active inductor on an integrated circuit, comprising:

a metal oxide semiconductor (MOS) transistor; and

a beyond voltage generator which generates a beyond voltage that is either greater than the highest voltage or less than the lowest voltage being supplied to said integrated circuit by a power supply;

wherein said MOS transistor is coupled to said beyond voltage generator so as to bias said MOS transistor with said beyond voltage and said MOS transistor is adapted to operate as said active inductor.

16. An integrated circuit comprising a metal oxide semiconductor (MOS) transistor adapted to operate as an active

inductor that is biased using a voltage generated on said integrated circuit that is outside the range of the voltage supplied by a power supply off of said integrated circuit for operating said integrated circuit.

The references set forth below are relied upon by the examiner as evidence of anticipation and obviousness:

Vargha	6,069,516	May 30, 2000 (filed Apr. 28, 1998)
Ko et al.	6,02,496	Feb. 22, 2000 (filed Jun. 3, 1998)

Claims 14-19 are rejected under 35 U.S.C. § 102(b) as being anticipated by Vargha. On page 4 of the answer, the examiner expresses his anticipation position as follows:

> Vargha discloses in Figure 1 a circuit comprising:
>
> - a metal oxide semiconductor (MOS) transistor (12);
>
> - a beyond voltage generator (10) which generates a beyond voltage (Vcc+V1) that is either greater than the highest voltage (Vcc) or less than the lowest voltage being supplied to said integrated circuit by a power supply; and
>
> - wherein said MOS transistor (12) is coupled to said beyond voltage generator (10) so as to bias said MOS transistor with said beyond voltage (Vcc+V1) and said MOS transistor (10) is adapted to operate as said active inductor.

Claims 1-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Vargha in view of Ko. The examiner's obviousness conclusion is set forth on page 5 of the answer and reads as follows:

> However, Vargha does not disclose a resistor having a first terminal coupled to said gate terminal of the transistor (10) and a second terminal coupled to the beyond voltage (Vcc+V1) that is derived from said power supply voltage (Vcc) as claimed. Ko et al teaches in Figure 2 an active inductor comprising resistors (R2, R4, R6, R8) coupled between the transistors (MT1-MT4) and a voltage divider (R1, R3, R5, R7, R9) for protecting the transistors from a rush currents [sic] from the voltage source (Vdd). It would have been obvious to a person having skill in the art at the time the invention was made to employ the resistor taught by Ko et al in the circuit of Vargha for the purpose of protecting the transistor.

We refer to the brief and reply brief as well as to the answer for a complete exposition of the opposing viewpoints expressed by the appellant and by the examiner concerning the above noted rejections.

OPINION

For the reasons set forth below, these rejections cannot be sustained.

Regarding the section 102 rejection, the appellant argues that the rejected claims distinguish over Vargha by way of the independent claim 14 recitation "said MOS transistor is coupled to said beyond voltage generator so as to bias said MOS transistor with said beyond voltage and said MOS transistor is adapted to operate as said active inductor" and by way of the independent claim 16 recitation "a metal oxide semiconductor (MOS) transistor adapted to operate as an active inductor that is

biased using a voltage generated on said integrated circuit that is outside the range of the voltage supplied by a power supply." More specifically, it is the appellant's contention that the Vargha circuit is not disclosed as being an active inductor and is not capable of functioning as an active inductor. According to the appellant, the Vargha circuit actually operates as a switch and lacks the structure (i.e., the resistor arrangement disclosed in the subject specification) necessary to bias patentee's transistor in such a way as to operate as an active inductor.

In response to these arguments, the examiner urges:

> Figure 1 of Vargha will perform the same function as the claimed circuit because both circuits have similar structures. Further, since the gate terminal of the MOS transistor (12) of Vagha [sic, Vargha] is biased in the same condition as the gate terminal of the claimed transistor, i.e., by "a gate voltage (Vcc + V1) outside the range of a supply voltage (Vcc)", the circuit of Vargha would perform the function of an inductor when the transistor is turned on [answer, page 6].

It is well settled that, where an examiner has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, the examiner possesses the authority to require an applicant to prove that the subject matter shown to be in the prior art does not possess the

characteristic relied on. For example, See In re Swinehart, 439 F.2d 210, 212, 169 USPQ 226, 228 (CCPA 1971). Nevertheless, it is also well settled that, before an applicant can be put to this burdensome task, the examiner must provide some evidence or scientific reasoning to establish the reasonableness of the examiner's belief that the functional limitation is an inherent characteristic of the prior art. See Ex parte Skinner, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986). Also see Ex parte Levy, 17 USPQ2d 1461, 1463-64 (Bd. Pat. App. & Int. 1990).

Here, the examiner's rationale for believing that the circuit of Vargha can perform the active inductor function required by claims 14 and 16 is that the Vargha and here claimed circuits "have similar structures" and that patentee's transistor "is biased in the same condition as the gate terminal of the claimed transistor." Id. It is true that, like the circuit of claims 14 and 16, the Figure 1 circuit of Vargha includes a transistor and a bias is supplied to this transistor using a voltage generated on the circuit. However, as thoroughly explained by the appellant in the brief and reply brief, the aforementioned commonalities are inadequate to establish that patentee's Figure 1 circuit is capable of performing the active inductor function of the appellant's claimed circuit.

Furthermore, this last mentioned determination is meaningfully reinforced by the fact that Vargha's Figure 1 circuit is in no way described as possessing an active inductor capability[1] and by the fact that this prior art circuit lacks the structure disclosed by the appellant as being necessary to perform an active inductor function.

Under the circumstances recounted above, it is clear that the examiner has failed to carry his burden of providing persuasive evidence or scientific reasoning to establish the reasonableness of his belief that Vargha's Figure 1 circuit is capable of performing the active inductor function required by appealed independent claims 14 and 16. It follows that the examiner likewise has failed to carry his burden of establishing a prima facie case of anticipation with respect to these claims or the claims which depend therefrom. Thus, we cannot sustain the examiner's section 102 rejection of claims 14-19 as being anticipated by Vargha.

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[1] On the contrary, as properly indicated by the appellant, this Figure 1 circuit is disclosed as functioning "to control the turn-on or turn-off of a load circuit" such as "an inductor" (column 1, lines 12-14). The fact that this Figure 1 circuit functions to control the turn-on and turn-off of an inductor load circuit militates against the examiner's position that the Figure 1 circuit is capable of performing an active inductor function.

For a number of reasons, we also cannot sustain the examiner's section 103 rejection of claims 1-13 as being unpatentable over Vargha in view of Ko. First, the applied prior art does not support the examiner's conclusion that it would have been obvious "to employ the resistor taught by Ko . . . in the circuit of Vargha for the purpose of protecting the transistor" (answer, page 5). This is because Ko does not teach that his resistors perform the aforequoted function of "protecting the transistor." Even if Ko contained such a teaching, the examiner's obviousness conclusion still would be unsupported by the applied prior art. This is because Vargha contains no teaching that his Figure 1 transistor requires the protection of a resistor. Indeed, for all we know based on the references applied by the examiner, the provision of a resistor would render the Figure 1 circuit of Vargha unsuitable for its earlier discussed purpose of controlling the turn-on or turn-off of a load circuit. Finally, the section 103 rejection still would be improper even disregarding each of these aforementioned infirmities. This is because the examiner has not established (or even attempted to establish) that the proposed combination of the applied reference teachings would supply the functional deficiency of Vargha's Figure 1 circuit. That is, the record

before us contains no evidence or reasoning to support the necessary determination that the Figure 1 circuit, if modified to include a resistor, would thereby be capable of performing the active inductor function required by the appellant's claimed circuit.

The decision of the examiner is reversed.

REVERSED

Bradley R. Garris)
Administrative Patent Judge)
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Catherine Timm) BOARD OF PATENT
Administrative Patent Judge) APPEALS AND
) INTERFERENCES
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)
Jeffrey T. Smith)
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